

Why Some Early College High School Students Do Not Transition to a 4-Year College: An
Exploration of Perceived Barriers and Schooling Experiences on Students' Transition Plans

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Abstract

This study examined why some seniors attending Early College High Schools did not plan to continue their education at a 4-year college immediately after graduation despite attending schools designed to provide coordinated academic and social supports with the expectation that all students would continue their education. Most students in our study (75%) did plan to continue their education at a 4-year college immediately after graduation. For the remaining students, we used cluster analysis to identify four distinct groups of non-college bound students. These groups were evaluated based on background characteristics, perceived opportunities and barriers, and schooling experiences. Results indicate that non-college bound students are diverse in their reasons for not continuing their education at a 4-year program and that any reform efforts designed to personalize opportunities and supports for these students must take into account how combinations of perceived opportunities and barriers shape their postsecondary decisions.

Keywords: Early college, postsecondary education, schooling experiences, educational expectations, non-college bound youth, work-bound youth, barriers

Why Some Early College High School Students Do Not Transition to a 4-Year College: An Exploration of Perceived Barriers and Schooling Experiences on Students' Transition Plans

Helping high school students make successful transitions to postsecondary education (PSE) is a goal of most high school reform efforts given the importance of PSE in the transition to adulthood. Individuals who attain a credential, particularly a bachelor's degree or associate's degree in a skilled-services industry, have greater access to higher paying jobs with benefits compared to those without a credential (Carnevale, Strohl, Ridley, & Gulish, 2018). This may explain why Rosenbaum and colleagues (2015) found that 86% of a nationally representative sample of youth attempted some form of PSE within eight years of high school graduation. Although such enrollment numbers are encouraging, graduation rates in the U.S. are concerning. Recent numbers from the National Center for Education Statistics (2017a; 2017b) indicate that only 60% of bachelor's degree students graduate within six years and 30% of associate's degree students graduate within three years.

Also concerning is the small, but not insubstantial, group of students who do not continue their education immediately after high school. Among the class of 2017, approximately one-third of graduates did not immediately enroll in any PSE (Bureau of Labor Statistics, 2018). Such students have been described in the literature as "non-college bound", "non-college educated", and/or "work-bound" (Burnell, 2003; Hamilton & Hamilton, 2006; Herr & Niles, 1997). Non-college bound youth are diverse and do not continue their education for a variety of reasons, but for many the reasons are related to family background factors, personal hardships, or negative schooling experiences (Juntunen & Wettersten, 2005). A particular concern for non-college bound youth is that once they leave school many become disconnected from formal services to help these youth transition to adulthood (Ling & O'Brien, 2013).

The purpose of this study is to report on the background characteristics, perceived barriers, and schooling experiences of students who do not plan to further their education at a 4-year college immediately after graduation despite attending an Early College High School (ECHS). ECHSs provide many of the coordinated academic and social supports that are often unavailable to students in traditional high schools. This study is unique given the focus on non-college bound students attending schools where staff and students share an expectation that all students will continue their education beyond high school. Although the context for this study is the ECHS, our results can inform other reform models because few studies have explored the experiences of non-college bound youth who attend schools with such coordinated efforts to deliver college and career readiness opportunities to students who are at risk for not continuing their education beyond high school.

Review of the Literature

Research on Non-College Bound Youth

Non-college bound youth are not well defined in the literature. Some investigators define non-college bound youth as those who have strong work orientations and/or who plan to enter the workforce after high school (Herr & Niles, 1997). However, some youth enter the workforce after high school because of hardship, not as a result of a strong work orientation, making such definitions problematic (Blustein et al., 2002; Bozick & DeLuca, 2011). Other investigators define this group in terms of actual PSE outcomes over motivational factors (Bozick & DeLuca, 2011; Juntunen & Wettersten, 2005; Rojewski & Kim, 2003). For this analysis we adopt Juntunen and Wettersten's definition of non-college bound youth as those who do not enroll in, or complete, a 4-year degree. Due to the timing of data collection, we use PSE expectations as a proxy for enrollment while acknowledging that plans and actual outcomes can differ.

A challenge in studying non-college bound youth is that these youth are diverse demographically, and in terms of their motivations, goals, aspirations, and levels of support (Blustein et al., 2002; Bozick & DeLuca, 2011; Hamilton & Hamilton, 2006; Herr & Niles, 1997; Juntunen & Wettersten, 2005). Though diverse, these youth tend to differ from college-bound youth in various ways. Demographically, non-college bound youth are more likely to be male and youth of color (Kao & Thompson, 2003; Rojewski & Kim, 2003; Worthington, Flores, & Navarro, 2005). In terms of family background, these youth are more likely to come from families with higher economic hardship, lower parental education, and lower educational expectations for their children (Deil-Amen & Turley, 2007). In terms of aspirations, non-college bound youth typically hold lower PSE aspirations than college-bound youth, but most recognize the importance of PSE (Blustein et al., 2002; Rojewski & Kim, 2003). Many non-college bound youth want to assume adult responsibilities early, make money, and work in low- or middle-skill jobs whereas college-bound youth typically aspire to professional or skilled jobs (Bozick & DeLuca, 2011; Burnell, 2003; Johnson & Elder, 2002; Rojewski & Kim, 2003; Staff, Schulenberg, & Bachman, 2010; Vuolo et al., 2014).

In terms of schooling experiences, non-college bound youth typically experience lower levels of achievement, engagement, and school valuing compared to college-bound youth (Deil-Amen & Turley, 2007). By the time these youth reach high school, many aspire to work because of negative prior schooling experiences. These youth may divest from school and place their energies into paid work when they see PSE as less relevant or attainable (Staff et al., 2010). Although work can be beneficial, working long hours or in low quality jobs can exacerbate low academic performance (Mortimer, 2010). In addition, non-college bound youth are less likely to

take part in PSE preparation activities, such as taking prerequisite tests or applying for financial aid (Castleman, Owens, & Page, 2015; Tierney et al., 2009).

Despite the recognition that non-college bound youth are diverse, most studies found in the literature make binary comparisons between college bound youth and non-college bound youth, with results indicating that non-college bound youth lag behind college-bound youth on most factors under consideration. A problem with this design is the implicit assumption that PSE attainment is a goal of all youth, thus the goals, motivations, and achievements of college-bound youth become the standard against which non-college bound youth are evaluated (see Bozick & DeLuca, 2011). Though many non-college bound youth come from disadvantaged backgrounds, experience problems in school, and experience problems transitioning to adulthood, some do not. Some are purposeful in their transition preparations, have contextual supports, and are satisfied with their transitions despite the lack of PSE (Blustein et al., 2002; Blustein, Philips, Jobin-Davis, Finkelberg, & Roarke, 1997; Bozick & DeLuca, 2011).

School Characteristics Associated with College Enrollment and Attainment

Schools play an important role in helping students prepare socially and academically for PSE through academic preparation, access to college-credit courses, creating a college-going culture, and helping students navigate the logistics of PSE enrollment. In terms of academic preparation, schools can help students develop critical thinking skills through rigorous instruction, by providing access to advanced coursework, and by promoting a more academically focused school culture (Achieve, 2004; Adelman, 2006). In addition, because most colleges require students to complete prerequisite courses, schools that are intentional in helping students complete a sequence of courses that meet these requirements can increase the chances that students will be eligible and academically prepared to enroll in college (Finkelstein & Fong,

2008). In terms of access to college-credit courses, most high schools offer Advanced Placement (AP) or dual-enrollment courses. Increasingly, schools are offering these courses to students beyond the highest achievers to promote college readiness and provide students with transferable credit for college (Iatarola, Conger, & Long, 2011).

In addition, schools can promote college-going cultures so that students see PSE as a possibility and understand the logistical steps necessary to enroll in and be successful in PSE (Koyama, 2007). Promoting a college-going culture can be particularly helpful for lower achieving students and for youth of color (Knight-Diop, 2010).

Additionally, the process of applying to college involves a number of steps that students must engage, starting well before the senior year, such as taking the appropriate placement exams, identifying colleges that are a good match, and completing applications to college and/or financial aid documentation (Bettinger, Long, Oreopoulos, & Sanbonmatsu, 2009). Students who are otherwise prepared for college may not enroll in college as a result of not meeting these important and necessary milestones (Castleman et al., 2015; Hahn & Price, 2008). For these reasons, the IES Practice Guide on Helping Students Navigate the Path to College (Tierney et al., 2009) recommends that schools put processes into place to help students meet the logistical steps to make PSE possible. These processes may be of particular importance to non-college bound youth, particularly for those who need support during the application process.

The Early College Model

Recent cohorts of youth have high aspirations with most planning to attain some form of PSE. However, many of these youth have unrealistic expectations about their futures as a result of lack access to rigorous coursework, programs, and services that promote a more realistic understanding of the requirements of PSE (Goyette, 2008; Meece et al., 2013; Mortimer,

Zimmer-Gembeck, Holmes, & Shanahan, 2002; Rosenbaum et al, 2015; Schneider & Stevenson, 1999). However, many traditional high schools do offer such supports, but schools are not always effective at coordinating academic and social supports in ways that meet students' individual needs or school staff do not always effectively encourages students to use these supports (Rosenbaum & Becker, 2011). Studies of non-college bound youth in particular suggest that while most report the availability of academic and counseling supports, many report being frustrated that the information they receive about college can be generic or that less attention is given to helping them explore college and career pathways that align with their particular aspirations, interests, and needs (Burnell, 2003; Krei & Rosenbaum, 2001; San Antonio, 2016).

Although various high school reform models exist, one model that has shown promise is the ECHS (Edmunds, 2012). ECHSs provide students with concurrent high school and college experiences, using many of the strategies articulated above, to blur the line between high school and college to support students' transition to college. However, ECHSs are not simply schools that offer more dual enrollment opportunities than traditional high schools. These schools require all students to be active participants in their schooling experiences (Rosenbaum & Becker, 2011). Edmunds and colleagues (2013) have termed this unique feature of ECHSs as "mandated engagement" because students are held to high academic standards and are expected to work more closely with faculty and staff to take part in academic and social supports to prepare these students for their futures.

Because the schools in this analysis are located in North Carolina, we describe how the model has been implemented in this state. In North Carolina ECHSs are primarily located on campuses of 2- and 4-year colleges and universities. They are district-run schools that target students who are typically underrepresented in college, including first-generation students,

students from low-income families, and students of color. ECHSs are expected to provide a rigorous course of study with the goal of all students graduating with a high school diploma and two years of transferable college credit or an associate degree. To accomplish this goal, ECHSs must collaborate with their higher education partners to develop an aligned high school and college curriculum that allow students to complete both degrees, typically within five years.

Each ECHS is expected to implement and exhibit a specific set of *design principles* that represent characteristics of high quality high schools (see North Carolina New Schools, 2013).

These six design principles include:

1) *Ensuring that students are ready for college.* This includes making sure all students take a sequence of college preparatory courses that meet the admission requirements for the UNC system. Students are also required to take college-level courses that either lead to an associate degree or in a sequence that supports a career pathway. ECHS students are able to take college courses at no cost to the family. Finally, teachers are expected to provide explicit instruction in college readiness skills (e.g., time management, note taking, etc.).

2) *Instilling powerful teaching and learning in the schools.* Teachers are expected to design rigorous instruction that ensures the development of critical thinking, application, and problem solving skills. Although instruction varies by subject and course, teachers are expected to implement instructional strategies that require students to “Read, Write, Think, and Talk” in every classroom, every day.

3) *Providing high student/staff personalization.* High-quality staff-student relationships are a key characteristic of ECHSs. As part of this, ECHSs are expected to provide students with academic and affective supports needed to be successful in more rigorous school environments.

4) *Redefining professionalism*. This design principle focuses on the experiences of the adults in the school and includes ongoing professional development and collaboration among faculty to support students' needs.

5) *Leadership*. ECHSs are expected to have leadership that promotes a common vision centered on college readiness.

6) *Implementing a purposeful design*. The final design principle reflects the structures and systems that need to be in place to support the other design principles. Such structures include the use of time to support teacher collaboration and student support, the location of the school on a college campus, and the alignment of resources.

ECHSs in North Carolina vary in how they implement these core design principles, although a randomized controlled trial has shown that ECHS students reports higher levels of academic expectations, academic and affective supports, and relationships than control students who did not attend the ECHS (Edmunds et al., 2013). Readers who want to learn more about what the implementation of these design principles look like in practice, particularly the ways in which the ECHSs in North Carolina are implementing college readiness activities, are encouraged to review findings from our previous work on program implementation (see Edmunds et al., 2013 and Edmunds, Arshavsky, Lewis, Thrift, Unlu, & Furey, 2017).

In addition, experimental studies show that ECHSs have positive impacts on a host of secondary and postsecondary outcomes. ECHS students are more likely to successfully complete a college preparatory course of study (Edmunds et al., 2016; Edmunds, Bernstein, Unlu, Glennie, Willse, et al., 2012). They also have higher attendance, fewer suspensions, and are more likely to graduate from high school than control students (Berger et al., 2013; Edmunds, Bernstein, Unlu, Glennie, Smith, et al., 2012; Edmunds et al., 2013). ECHS students enroll in PSE at higher rates

and are more likely to receive a postsecondary credential (Berger, Turk-Bicakci, Garet, Knudson, & Hoshen, 2014; Berger, et al., 2013; Edmunds et al., 2016).

Conceptual Framework and Objectives

Our goal is to understand why some ECHS students decide not to continue their education despite attending a school specifically designed to facilitate the high school to college transition. To accomplish this goal we focus on two areas. First, we report on non-college bound students' self-reported reasons for not continuing their education beyond high school; a perspective that has received less attention in the literature on non-college bound youth (Bozick & DeLuca, 2011). Second, we explore non-college bound students' perceptions of their schooling experiences to better understand the role that the ECHS plays in informing their PSE planning. To address these areas, this study was guided by ecological theory and person-oriented analysis. Ecological theory posits that students follow a developmental trajectory that is influenced by the interplay of individual and contextual factors, with students' own choices and actions being affected by and affecting the opportunities and constraints provided by their social context (Elder & Shanahan, 2006). In this study, non-college bound students come to the ECHS with diverse motivations, knowledge, supports, and barriers that influence how they perceive school, which in turn influences their levels of engagement. The ECHS provides a context designed to support students' transition pathways, particularly for at-risk students, but according to ecological theory, the way that students engage these supports is influenced by their perceptions, dispositions, knowledge, and external supports that they bring to school.

Given the diverse experiences and characteristics of non-college bound youth, particularly in their reasons for not continuing their PSE, it is important to formally incorporate this diversity into the analysis. Person-oriented analysis is a method that is complementary to

ecological theory. The goal of person-oriented analysis is to identify unique groups of individuals with similar developmental experiences as a unit of analysis to explore how these groups differ on outcomes of interest (Bergman & Trost, 2006). Person-oriented analysis is particularly valuable for identifying groups of individuals whose behaviors and experiences differ from those who follow more commonly established developmental pathways. For example, person-oriented analysis has been used to explore differences between high and low academically performing non-college bound youth as well as non-college bound youth from high and low SES backgrounds to better understand how these unique groups differ in their transition experiences (Blustein et al., 2002; Bozick & DeLuca, 2011; Burnell, 2003; Hahn & Price, 2008). For this study, we use cluster analysis to identify subgroups of non-college bound youth who differ on reasons for not continuing their education beyond high school to explore relations between students' PSE motivations and perceived schooling experiences.

Person-oriented analysis has been used infrequently in studies of non-college bound youth, which is unfortunate given the strength of this approach in identifying groups of individuals with common experiences within diverse populations. This methodological approach may be particularly instructive for this investigation because of its potential to provide more nuanced information on the diverse experiences of non-college bound youth that can be used by researchers and practitioners to develop more personalized supports for these youth. To that end, this study is guided by the following three research aims:

1. How do ECHS seniors who plan to attend a 4-year college directly after high school differ from those who plan to attend a 2-year college and those who do not plan to continue their education on background characteristics and schooling experiences?

2. Using cluster analysis, can distinct and theoretically meaningful subgroups of non-college bound youth (those who do not plan to continue to a 4-year college) be identified based on patterns of perceived barriers to PSE?
3. How do subgroups of work-bound youth differ from each other and from college-bound youth on background characteristics and schooling experiences?

Method

Data and Sample

This study is part of a larger experimental study funded by the Institute of Education Sciences to look at the impacts of ECHSs on students' academic and behavioral outcomes. This smaller study includes 511 high school seniors across 18 ECHSs in North Carolina who completed a brief survey about their schooling experiences and postsecondary plans. An average response rate for the survey was 82%. In total, 63.5% of the sample was female and 31.6% self-reported as an under-represented minority student in college. ECHS are schools of choice to which students must apply. The schools participating in the larger experimental study agreed to use a lottery to select students from their eligible applicant pool. However, for this current study, the cohort of students who completed the survey were not necessarily randomly selected to attend the ECHS.

Variables

Dependent variable. Students were asked about their future plans with the following question, "In the next year after graduating from the early college, I plan to:" Answer choices included *work full-time at a job, join the military, attend a 2-year college, attend a 4-year college or university, I'm not sure, or other*. Answer choices were collapsed into *2-year college, 4-year college, or no plans to attend*.

Background variables. Near the end of the survey, students were asked to report their gender and race/ethnicity. Responses of Black/African-American, Hispanic/Latino/Latina, and Native American or Alaskan Native were collapsed into underrepresented minority = 1. Students were asked about their current and prior educational expectations and aspirations. Students were provided with three statements “Today I wish I could finish...”, “Realistically, I am likely to finish...”, and “Before I came to the early college, I thought I would finish...” Answer choices included *high school or less*, *two years of college*, *four years of college*, and *more than four years of college*. Responses were converted to years of schooling for analysis (i.e., high school or less = 12, 2-year college = 14, 4-year college = 16, post-graduate = 18).

Perceived barriers. Students who did not plan to continue their education at a 4-year college or university completed items related to perceived barriers to PSE that were developed for the evaluation, but were consistent with barrier items used in other studies (e.g., Irvin, Byun, Meece, Farmer, & Hutchins, 2012; McWhirter et al., 2007). Students were asked, “How important were the following reasons in your own decision about what to do after graduation?” Reasons included *financial* (My family and I cannot afford to pay for college; I need to work in order to provide for myself and/or to help my family), *academic utility* (I don’t need a 4-year college education for the career I plan to pursue), *personal indecision* (I don’t know what I want to do in terms of my career), *personal problems* (I have personal problems or issues that make it hard for me to go to college), *negative academic attitude* (I am tired of school and learning; I am not interested in academic activities), *negative attitudes toward college success* (I cannot get into the college I want; I don’t feel I am academically prepared to continue my education), and *negative community expectations* (People like me or in my community are not expected to go to

college; Someone I care about does not want me to go to college). Response options include: *not at all important, a little important, somewhat important, and very important*.

Schooling experiences. For this study, schooling experiences included self-reported academic grades, liking school, persistence in school, counseling support, exploration support, ECHS' influence on aspirations, and teacher support. Answer choices for the latter four experiences included *strongly disagree, disagree, agree, and strongly agree*.

Grades. Students were asked, "What kind of grades did you receive last year?" Answer choices included: *All A's, Mostly A's and B's, Mostly B's and C's, Mostly C's and D's, and Mostly D's and F's*. Grades were treated as continuous (All A's = 5; Mostly D's and F's = 1).

Liking school. Students were asked, "Overall, how would you rate your early college experience this year?" Answer choices included: *hated it, didn't really like it, liked it, and loved it*. Liking school was treated as continuous (hated it = 1; loved it = 4).

Persistence in school. To assess students' persistence in school, students completed six items, "I gave up when schoolwork became too hard (reverse coded)", "When schoolwork became difficult, I found a way to get help", "I gave extra effort to challenging assignments or projects", "I kept trying to do well on my schoolwork even when it wasn't interesting to me", "I tried really hard to do a good job", and "I kept working on a hard problem or assignment even when it took much longer than I expected." Answer choices included: *once in a while, half of the time, most of the time, and all of the time*. Cronbach's alpha for this scale was .82.

Counseling support. To assess students' perceptions that they were supported through career and college counseling and coursework, students were asked how much they agreed with six statements, "I wish my early college did more to help me explore my future career and college choices", "I wish my early college did more to help me explore career choices that do not

require a 4-year college”, “I wish my early college provided more support for my college applications”, “I wish the school provided more counseling for me on which college courses I need to take to fulfill my goals”, “I wish my early college offered more general academic transferable college level classes”, and “I wish my early college offered more technical or career track college level classes.” Items were reverse coded and averaged so that higher values indicated greater perceived support. Cronbach’s alpha for this scale was .84.

Exploration support. To assess students’ perceptions that they were supported in their efforts to explore various career and college opportunities, students were asked how much they agreed with three statements, “My early college helped me to explore different careers and college majors”, “My early college helped me to explore what education I will need for different careers”, “My early college helped me to decide whether I would like to take more college classes.” Cronbach’s alpha for this scale was .80.

Influence on aspirations. To assess students’ perceptions that the ECHS positively influenced their PSE aspirations, students were asked how much they agreed with four statements, “My early college experience shifted my priorities towards learning”, “My early college experience shifted my priorities towards taking responsibility”, “My experience at the early college convinced me that I want to go to college”, and “My school has helped me to develop the skills and knowledge I need for college-level classes.” Cronbach’s alpha for this scale was .79.

Teacher support. To assess students’ perceptions that they were supported by their teachers, students were asked how much they agreed with eight statements, “My early college teachers care about me”, “My teachers listen to what I have to say”, “My teachers care whether or not I come to school”, “I receive a lot of encouragement from my teachers”, “I am respected

and appreciated by my teachers”, “My teachers praise my efforts when I work hard”, “My teachers care about the grades I make”, and “My teachers expect me to do my best.” Cronbach’s alpha for this scale was .95.

Analyses

To address the first research aim, students were classified into three postsecondary plan groups for analysis: 4-year college, 2-year college, and no PSE plans directly after high school. Multinomial logistic regression was used to evaluate group differences on student background characteristics and schooling experiences using STATA 21.0. Because students who planned to enroll in a 4-year college received different items related to reasons for PSE plans, comparisons to the 2-year and no PSE plans group on barriers was not possible at this step. For this analysis students who planned to attend a 2-year college were designated as the reference group following recommendations from Bozick and DeLuca (2011). Missing data were imputed for 21 students using the multivariate normal imputation procedure (`mi impute mvn`). To account for students nested within schools, the cluster procedure was employed to generate robust standard errors.

To address the second research aim, cluster analysis was used to uncover patterns of perceived educational barriers among students who did not plan to enroll in a 4-year college directly after high school. For this analysis, both the 2-year college group and no PSE plans group were cluster analyzed together. Hierarchical clustering with Ward’s algorithm and squared Euclidian distance as the distance measure was first used to identify an initial cluster solution followed by k-means clustering to improve initial cluster solutions (Aldenderfer & Blashfield, 1984). The goal of this method is to create homogenous clusters where members are more similar to each other and less similar to members of other clusters. The optimal number of clusters to retain was determined by evaluating the change in the agglomerative coefficient at

each clustering step. A sharp increase in the coefficient indicates that two dissimilar clusters were fused and that the solution from the previous step is the more acceptable solution.

To address the third research aim, contingency table analysis and Analysis of Variance (ANOVA) were used to detect differences between the identified non-college bound subgroups and to compare these subgroups to the college-bound students on background characteristics and schooling experiences. Although multinomial logistic regression would be the preferred analytic method, we chose not to employ this approach because of the small sizes of certain non-college bound subgroups.

Results

Research Aim 1

Most students planned to attend a 4-year college directly after high school (75.1%), followed by 16.6% who did not plan to continue their education immediately. Only 8.2% of students planned to enter a 2-year college immediately after high school. Of those who did *not* plan to continue their education, 30.6% were unsure of their plans, 29.4% planned to work, 21.2% reported other, and 18.8% planned to join the military. In terms of background characteristics, female students were more likely to plan to attend a 4-year or 2-year college compared to the no PSE plans group (see Table 1). Groups were similar in terms of race/ethnicity. However, in terms of educational expectations and aspirations, those who planned to attend a 4-year college/university directly after high school were more likely to report higher current educational expectations and aspirations for their futures and more likely to report that they came to the ECHS with higher educational expectations than the other groups. The two non-college bound groups did not differ from each other on these three variables.

In terms of differences between groups on perceived barriers, only differences between the 2-year college group and the no PSE plans group are reported because the 4-year college students received different items that could not be directly compared to the items designed for non-college bound students. Across the seven domains, the only statistically significant difference between groups was in terms of financial hardship (see Table 1). Those who planned to enroll in a 2-year program were more likely to report that financial hardship played a role in their decisions about what to do after graduation compared to the no PSE plans group. Follow up analysis (not shown in Table 1) on the total number of barriers reported as being “very important” between both groups indicates that the 2-year group reported more barriers ($M = 2.38$, $SD = 2.66$) than the no PSE plans group ($M = 1.86$, $SD = 1.84$). However this difference was not statistically significant ($t(123) = 1.29$, $p = .20$, n.s.) suggesting that in terms of the number of barriers, both groups perceived a similar number of barriers to their futures.

In terms of schooling experiences, those who planned to attend a 4-year college reported the highest grades followed by the 2-year college and no PSE plans groups. The no PSE plans group reported lower levels of school liking compared to the other groups. With regard to persistence in school, those who planned to attend a 4-year college reported the highest persistence compared to the other two groups, which did not differ from each other. For counseling support, the 2-year college group reported the lowest support compared to the other two groups, which did not differ from each other. For exploration and teacher support the 2- and 4-year college groups reported the highest level of exploration and teacher support, although the 2-year and no PSE plans groups did not differ in their levels of perceived exploration and teacher support. In terms of the influence of the school on students’ aspirations, students with no PSE plans reported the lowest levels of influence. Taken together, these results generally suggest that

much of the difference between the groups is between those with plans for 4-year college and the two other groups, with the two other groups evidencing similar patterns of schooling experiences.

As a second step, students' background and schooling experience variables were entered into a multinomial logistic regression model to estimate the contribution of each variable while holding other variables constant. Results of this analysis revealed several group differences (see Table 2). Compared to those who planned to enroll in a 2-year college, 4-year college students were statistically significantly less likely to be female ($OR = 0.49$), but more likely to hold higher current educational aspirations and initial (start of high school) educational expectations ($OR = 1.56$ and 1.32 , respectively). In terms of schooling experiences, 4-year college students were more likely to report having higher grades ($OR = 1.85$) and more positive ECHS counseling support experiences around college and careers ($OR = 1.82$) compared to students who planned to attend a 2-year college. No other schooling experience variables were statistically significant between the 2-year and 4-year college groups. Compared to those who planned to enroll in a 2-year college, students with no immediate PSE plans were less likely to be female students ($OR = 0.36$). No other background variables were statistically significant. In terms of schooling experiences, students with no immediate PSE plans were more likely to report more positive ECHS counseling support experiences compared to the 2-year college group ($OR = 2.11$).¹

Research Aim 2

A second aim of the analysis was to combine all students who did not plan to attend a 4-year program into one group and to cluster analyze these students based on their responses to

¹ Given the small ratio of variables to cases, the three educational expectation and aspiration variables were removed in a follow up analysis to evaluate changes to the model. Removal of these variables did not substantively impact the schooling experience variables, but it did lead to the significant gender difference found between 2-year and 4-year college groups to no longer be statistically significant.

perceived barriers to PSE. As a first step, the seven perceived barriers were first analyzed using hierarchical cluster analysis. Inspection of the agglomerative coefficients plotted by cluster solution indicated a sharp rise at the three cluster solution, suggesting a four cluster solution was most parsimonious. This finding was verified by generating and reviewing descriptive statistics on the four cluster solution. Inspection of the descriptive statistics suggested that four homogenous clusters were identified. To enhance the final cluster solution, the four clusters were submitted to k-means clustering where 11 (9%) students were relocated to better fitting clusters.

Descriptive statistics on the final cluster solution can be found in Table 3. The largest cluster, *Low Risk* cluster ($n = 40$; 32.8%), was comprised of students who reported below average values across all of the perceived barriers, particularly around career indecision (z score = -1.04). Next, the *Multiple Risk* cluster ($n = 32$; 26.2%), was comprised of students who reported above average perceived barriers across all indicators, particularly perceived personal problems, negative attitudes toward college success, and negative community expectations around college. The *Undecided* cluster ($n = 25$; 20.5%), was comprised of students who reported the highest level of career indecision as well as the highest level of disagreement to the statement that a 4-year degree was not necessary across the four groups. This group also tended to report average levels of barriers across all other domains. The final group, the *Low Utility* cluster ($n = 25$; 20.5%), was comprised of students who also reported few barriers, but this group reported the highest level of agreement to not needing a 4-year degree, suggesting that this group may aspire to jobs that do not require a 4-year degree.

Research Aim 3

As a preliminary follow up, clusters were further explored in terms of the composition of the clusters based on background characteristics and schooling experiences (see Table 4).

Additionally, clusters were compared to students who planned to complete a 4-year degree immediately after high school. Given the small size of some of the clusters (i.e., less than 10% of the overall sample), multinomial logistic regression was not conducted to evaluate the relative and unique impact of each background and schooling experience variables at this time.

In terms of background characteristics, female students were overrepresented in the 4-year college group, but underrepresented in the *Low Risk* cluster. No statistically significant group differences were detected based on race/ethnicity. However, inspections of the percentages suggest that under-represented students were over-represented in the *Multiple Risk* and *Unsure* clusters (43.8% and 40.0%, respectively). With regard to overall educational expectations and aspirations, the 4-year program group held the highest current aspirations compared to all other groups (which did not differ from each other). The 4-year program group also held the highest current expectations across groups, but within the non-college bound groups, the *Multiple Risk* cluster held lower expectations compared to the *Low Risk* cluster. For PSE expectations upon entry to the ECHS, the 4-year, *Unsure*, and *Low Utility* groups did not differ from each other. However, the 4-year group did hold statistically significantly higher initial PSE expectations compared to the *Multiple Risk* and *Low Risk* groups.

In terms of schooling experiences, the 4-year program group self-reported the highest grades compared to all other groups (which did not differ from each other). On liking school, although the four non-college bound clusters did not differ from each other, the *Multiple Risk* and *Low Risk* groups did report liking school less compared to the 4-year group. With regard to persistence, the non-college bound clusters did not differ from each other, but the 4-year group did report higher levels of persistence compared to all groups except the *Low Utility* group. In terms of counseling support, the *Multiple Risk* group reported the lowest level of support

compared to all other groups, but the difference was not statistically significant compared to the *Unsure* and *Low Utility* groups. No group differences were detected on exploration support. In terms of the ECHS's influence on students' aspirations, the non-college bound clusters did not differ from each other, but the 4-year program group perceived greater levels of influence compared to all clusters except the *Unsure* cluster. Finally, on perceived teacher support, although a significant omnibus test was detected, follow up post hoc analysis did not reveal statistically significant group differences.

Discussion

This study is one of the few that explores the schooling experiences of non-college bound youth using methods to understand the diverse experiences of these youth as they plan for their futures. A concern among researchers and policymakers is that youth today hold high aspirations, but many lack access to structural supports and resources to facilitate this critical transition (Mortimer et al., 2002). This study takes place within the context of ECHSs, which are designed to provide many of the coordinated supports and resources, particularly for non-college bound students, that are lacking in many traditional high schools (Rosenbaum & Becker, 2011). To our knowledge, this is the first study of its kind to explore the schooling experiences of non-college bound youth attending ECHSs. Results from this study are important because findings help address the question of why some students do not plan to continue their education immediately after high school despite attending a school designed to encourage non-college bound youth to attend PSE. Our results suggest that non-college bound youth themselves conceptualize their transition opportunities and barriers in complex ways that include, but are not limited to, academic and economic considerations. Our results reinforce the call for more personalized academic and social supports for non-college bound youth, particularly supports

that value the motivations, goals, and the challenges that these youth face. In closing, we discuss implications of our findings organized around each study aim, followed by a discussion of limitations.

Research Aim 1

The goal of this aim was to provide a more traditional descriptive report of the characteristics of students based on their immediate PSE plans, disaggregated by degree type (4-year, 2-year, no PSE). Most students (75%) planned to continue their education immediately after high school which is consistent with the literature that today's youth hold high aspirations (Goyette, 2008). Such findings were expected given that students who attend ECHSs in North Carolina know that PSE attainment is a primary goal of the model. Also, students who planned to attend a 4-year college directly after high school reported higher aspirations upon entry to high school, which is consistent with the literature that youth tend to form such aspirations prior to high school (Eccles & Roeser, 2009). Finally, the 4-year college group generally reported more positive schooling experiences compared to the 2-year and no PSE groups which is consistent with the literature (Deil-Amen & Turley, 2007).

However, our analysis revealed two important findings. First, in terms of perceived barriers, the 2-year college group reported higher family hardship compared to the no PSE group which runs counter to the expectation that perceived economic hardship would be higher in the no PSE group as it would serve as a barrier to PSE attainment (Bozick & DeLuca, 2011; Meece et al., 2013). It may be the case that those who experience greater hardship may see 2-year college as a gateway to overcome this hardship. Those who experience less hardship may perceive greater opportunities and supports within the family and in the local community that may offset some of the risk of not attaining any PSE (Blustein et al., 2002). More work is needed

here to replicate these findings and to understand the role of the ECHS in helping students who face economic hardship plan for their futures.

Second, in terms of schooling experiences, students who planned to attend a 2-year college reported less counseling support compared to the 4-year and no PSE groups. Based on the literature, we would expect the no PSE plans group to report lower levels of counselor support compared to either the 2- or 4-year college groups (Burnell, 2003; Krei & Rosenbaum, 2001). More work is needed to fully understand this finding. One area to explore is the academic emphasis of the ECHS and how this relates to non-college bound students' perceptions of support. ECHSs in North Carolina differ in their academic emphasis. Some ECHSs emphasize 4-year degree attainment, whereas others emphasize alternative pathways as viable options for PSE (e.g., 2-year degrees, CTE certifications, etc.). It may be the case that non-college bound youth who aspire to a 2-year program may have aspirations that are misaligned with the staff's expectations for students, which are typically around 4-year degree completion. However, this explanation does not account for why the no PSE group report similar levels of support as the 4-year college group, suggesting that this hypothesis is speculative without further study.

Research Aim 2

The goal of this aim was to explore whether using person-oriented analysis to identify subgroups of non-college bound youth resulted in the identification of meaningful subgroups that provide insights into ways to support these youth. Our results suggest that the answer is yes, and that such a methodological approach may challenge some of the reductionist conceptualizations of non-college bound youth found in the literature. Results of our cluster analysis revealed four distinct pathways. The most prevalent pathway was the *Low Risk* group, characterized by students who held positive academic attitudes, believed that they could be successful in PSE,

believed that a 4-year degree was important, and held the lowest levels of career indecision, compared to all other groups. Although not assessed directly, these youth may have more work-oriented goals and perceive few barriers to enacting these goals, including delaying their education. The next largest pathway was the *Multiple Risk* group, characterized by students who reported multiple barriers including financial hardship, career indecision, personal problems, negative attitudes toward school, negative perceptions of college success, as well as low expectations of college attendance from others. These next two groups (of equal size) were the *Low Utility* and *Undecided* groups, characterized by students who perceived less need for PSE and greater levels of career indecision (respectively) compared to all other groups. It should be noted that these latter two groups reported little academic and financial hardship.

Our cluster analysis results are notable for two reasons. First, non-college bound students reported a number of reasons for not planning to attend a 4-year degree program directly after high school. In fact, no more than 60% of non-college bound youth rated any particular reason as “important” or “very important” in their decision to forgo a 4-year degree. This finding is consistent with work from Bozick and DeLuca (2011) who argue that the perceived barriers of non-college bound youth are diverse and that the limited focus within the literature on areas such as academic and economic hardship may fail to appreciate the role that other factors, including combinations of factors, play in shaping non-college bound youth’s PSE transition decisions.

Second, the identified non-college bound subgroups further challenges the notion that non-college bound youth forgo PSE primarily due to academic and economic hardship. Although the *Multiple Risk* group more closely resembles a standard conceptualization of non-college bound youth found in the literature, the other identified groups, particularly the *Low Risk* group, present a challenge to the notion that non-college bound youth are at risk. Our current secondary

and postsecondary educational practices are built on the assumption that most students want to attend a 4-year college and that failure to do must be related to some type of hardship (Rosebaum, 2001). Our analysis revealed that nearly half of the non-college bound youth planned to work after high school or join the military. Relatively few were unsure of what they wanted to do. In fact, the *Undecided* group recognized the importance of a 4-year degree, but these youth were unsure of what they wanted to do for a career, which may be why they planned to delay their education. Conventional wisdom in education would suggest that these youth may be at risk, but it may be the case that delaying PSE may be an adaptive strategy that may have long term benefits for these youth who are unsure of what they want to do, but are unwilling to give college a try without more concrete plans (Rosenbaum et al., 2015).

Although it is beyond the scope of this study to know that this is the case, or to argue for the merits of this approach, some investigators have called for more research and practice that focuses on promoting adolescents' decision making and exploration activities around the transition to adulthood over studies and practices that promote increasing aspirations without helping youth develop more realistic and informed decisions (Meece et al., 2013). For example, Dietrich and colleagues' (2012) work on *Phase Adequate Engagement* as well as Schneider and Stevenson's (1999) work on *Aligned Ambitions* both call for greater consideration of how youth engage in exploration activities to develop informed decisions to help these youth meet their transition pathways, even if these pathways do not immediately lead to PSE attainment.

For practitioners, results of this study illustrate that non-college bound youth are a diverse group and intervention efforts may be thwarted if their diverse goals, aspirations, and needs are not addressed. Findings from the cluster analysis reinforce calls for college and career readiness and exploration activities that are personalized to the unique needs of each student. Although it is

beyond the scope of this discussion to suggest specific ways to personalize opportunities for different groups of non-college bound students, one can certainly imagine how employing strategies for someone who sees little use in a 4-year degree (i.e., *Low Utility* group) may be less effective for someone who values education, but may be unwilling to pursue PSE without more firm career plans and interests (i.e., *Undecided* group). The former student may benefit from targeted strategies that highlight the financial benefits of PSE whereas the latter student may benefit from focused career exploration or work-based learning to promote more crystalized work interests.

Research Aim 3

The goal of this aim was to evaluate how subgroups of non-college bound youth differed from the 4-year college group, but most importantly each other on background characteristics and schooling experiences. Consistent with previous literature, our results generally indicated that all non-college bound groups reported lower educational expectations and aspirations compared to the 4-year college group (Juntunen & Wettersten, 2005). Although the four groups did not differ from each other on their current educational aspirations and educational expectations at entry to high school, in terms of current educational expectations, the *Multiple Risk* group held the lowest expectations and the *Low Risk* group held the highest expectations, suggesting that at least some non-college bound youth plan to return to school at some point. Although encouraging, one concern is that youth who take a break from school, particularly those who experience economic hardship or problems in school, are less likely to continue their education (Bozick & DeLuca, 2005; Mortimer, 2010). Once these students leave school they have few structured supports in the community to support their return to PSE, making it

important that school staff help these youth develop a transition plan that involves returning to school at some point even though this pathway may not be ideal.

In terms of differences on schooling experiences, in general, the 4-year college group reported better grades, reported liking school more, and reported greater levels of persistence in school compared to all non-college bound groups (which did not differ from each other). However, in terms of counseling, teacher, and exploration support, all groups reported similar levels of support. What makes this finding particularly interesting is that some non-college bound youth, including high achieving non-college bound youth, report being disconnected from school, report school staff as being less supportive, or report staff offer less nuanced college and career advice (Burnell, 2003; Krie & Rosenbaum, 2001; Mortimer et al., 2002; San Antonio, 2016). This perceived lack of support may not be imagined as Krie and Rosenbaum (2001) have found that counselors often encourage non-college bound youth to enroll in a 4-year college with fewer counselors discussing opportunities around technical educations, apprenticeships, or job certificates. Although results from experimental studies demonstrate that ECHS students feel more supported than students in comparison schools in general, this research has not focused on non-college bound youth in particular (Edmunds et al., 2013). Our results suggest that non-college bound youth who have greater access to college and career readiness resources and support may feel more connected to and supported by adults at their school, but this suggestion should be tested in future research.

One notable exception to this finding is that the *Multiple Risk* group reported statistically significantly lower levels of counseling support compared to the 4-year college group and *Low Risk* group. Results from our study do not provide a clear explanation for this finding. It may be the case that these youth are experiencing multiple challenges both within and outside of the

classroom (as evidenced by the cluster results) and the counseling support that they receive may not include as much social and emotional support to help these youth juggle the multiple contextual constraints that can interfere with school. Preliminary results from another study (in preparation) based on interviews with a different cohort of ECHS non-college bound youth seems to support this conclusion. Although a definitive conclusion cannot be put forward, these results clearly suggest a need for research to better understand why some non-college bound youth attending an ECHS find the counseling services to be less supportive.

A final finding with implications for research and practice is that in terms of the ECHS's influence on aspirations, the *Unsure* group reported similarly higher levels of perceived influence as the 4-year college group, although it should be noted that the difference between the *Unsure* group and other non-college bound groups was not statistically significant. An implication of this finding is that while ECHSs are designed to influence aspirations, particularly in a positive direction, it is also possible that attending an ECHS can create uncertainty for students. Some students may thrive in this rigorous environment and want to further their education as a result, but this environment may give other students pause, particularly students who think that they are academically ready for college when they are not. Alternatively, these experiences may help some students discover that they may want to pursue other pathways to PSE that do not involve a 4-year degree. Findings from this study cannot be used to draw this inference directly. Future studies should address this finding by identifying non-college bound youth who leave the ECHS being unsure of what they want to do with the goal of understanding whether this lack of certainty is beneficial and based on purposeful exploration within the supportive context of the ECHS, or problematic in that this indecision is based on a student not attempting or being unwilling to explore opportunities and options. Either way, this finding

suggests that as school staff work to provide resources and information to students, exposure to this information may create a healthy level of uncertainty that students and staff can work together to address.

Study Limitations

Although informative, results from this study must be interpreted in light of four important limitations. First, because students who attend ECHSs do so by choice and after completing an application and screening process, results from this study may have limited generalizability to the general population of non-college bound youth attending traditional high schools. However, because the ECHSs in this study specifically target students who are typically under-represented in PSE, these findings may be informative to many practitioners and researchers who are leading similar high school reform efforts that specifically target students who are at greater risk for not continuing their education beyond high school.

Second, students' postsecondary education outcomes for this analysis were derived from students' plans because actual PSE outcomes were not available. Although PSE aspirations and expectations are significant predictors of attainment (see Bandura, Barbaranelli, Caprara, & Pastorelli, 2001), we agree with other investigators of non-college bound youth that actual PSE outcomes are preferable (Rojewski & Kim, 2003). Second, results are derived from a survey which limits our ability to assess the availability of objective supports. However, although objective and structural characteristics of schools (e.g., size, location) play an important role in creating a context for development, from an ecological perspective, a student's subjective evaluation of school play an equally important role in influencing how these youth formulate and enact future plans (Eccles & Roeser, 2009; Lent, Brown, & Hackett, 2000). Future studies of non-college bound youth who attend ECHSs (or similarly structured schools) should include

objective features and subjective experiences of that environment to better understand if and when these elements do not operate in the same direction for non-college bound youth.

Finally, the survey did not include items that assessed students' current college-coursetaking patterns, particularly whether they anticipated graduating from the ECHS with an Associate's degree or other credential. All students attending ECHSs are expected to attain some college credit, but some students may attain an Associate's degree or other credential along with the high school diploma. It is likely that some of the non-college bound students were on track to attain a PSE credential. It is unclear how these students, particularly those who only wanted to attain an Associate's degree, would have answered the future PSE expectation and aspirations questions given that they were already on track to graduate with a credential. Future studies of non-college bound youth attending schools that blend high school and college coursework, should be particularly mindful of this issue when assessing students future PSE plans.

Conclusion

In summary, results from this study are preliminary and descriptive given the lack of research on non-college bound youth attending ECHSs, a context designed to address the needs of this population. Although preliminary, results from this study do suggest a number of directions for future research and practice. More work is needed to understand how non-college bound youth who attend ECHSs conceptualize the transition to adulthood, and how these students believe their schooling experiences support their transition preparations. We encourage future investigators to make greater use of qualitative and mixed methods approaches to lend voice to the experiences of non-college bound youth themselves. There are numerous examples from the literature where qualitative research has provided a more nuanced perspective to

supplement quantitative results, particularly around non-college bound youth's schooling experiences (Blustein et al., 1997; Burnell, 2003; San Antonio, 2016).

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Table 1

Descriptive Statistics on Students' Postsecondary Education Expectations Immediately After High School

Variable	Postsecondary Education Expectations Directly after Early College				Group Differences
	Sample	4-year college	2-year college	None	
<i>N</i> (%)	511 (100%)	384 (75.1%)	42 (8.2%)	85 (16.6%)	
Background Variables					
Gender (Female)	325 (63.6%)	260 (67.7%) ^a	29 (69.0%) ^a	36 (42.4%) ^b	$\chi^2(2, N = 511) = 19.91, p < .001^{***}$
Under-represented Minority	161 (31.5%)	123 (32.0%) ^a	15 (35.7%) ^a	23 (27.1%) ^a	$\chi^2(2, N = 511) = 1.17, p = .56, n.s.$
Educational Aspirations	16.73 (1.47)	17.09 (1.25) ^a	15.70 (1.47) ^b	15.57 (1.59) ^b	$F(2, 503) = 58.20, p < .001^{***}$
Educational Expectations	16.27 (1.54)	16.65 (1.28) ^a	15.43 (1.48) ^b	14.94 (1.73) ^b	$F(2, 503) = 59.57, p < .001^{***}$
Pre-High School Expectations	15.77 (1.74)	16.07 (1.54) ^a	14.70 (2.00) ^b	14.86 (1.95) ^b	$F(2, 499) = 26.87, p < .001^{***}$
Perceived Barriers (non-4-year enrollees only)					
Financial Hardship	2.75 (0.89)	-	3.00 (0.80) ^a	2.58 (0.90) ^b	$t(125) = 2.59, p = .01^{**}$
Don't Need a 4-Year Degree	2.17 (1.11)	-	2.14 (1.16) ^a	2.18 (1.09) ^a	$t(125) = -0.18, p = .86, n.s.$
Career Indecision	2.50 (1.24)	-	2.44 (1.32) ^a	2.53 (1.21) ^a	$t(125) = -0.38, p = .70, n.s.$
Personal Problems	2.11 (1.12)	-	2.21 (1.13) ^a	2.06 (1.11) ^a	$t(124) = 0.73, p = .47, n.s.$
Negative Academic Attitude	2.36 (0.97)	-	2.13 (0.93) ^a	2.47 (0.98) ^a	$t(123) = -1.86, p = .07, n.s.$
Negative Attitudes Toward College Success	2.13 (1.00)	-	2.18 (1.05) ^a	2.10 (0.98) ^a	$t(125) = 0.42, p = .68, n.s.$
Negative Community Expectations	1.64 (0.79)	-	1.83 (0.95) ^a	1.55 (0.67) ^a	$t(123) = 1.93, p = .06, n.s.$
Schooling Experiences					
Grades	3.79 (0.86)	4.00 (0.74) ^a	3.39 (0.67) ^b	3.01 (0.97) ^c	$F(2, 507) = 62.60, p < .001^{***}$
Liking School	3.12 (0.78)	3.22 (0.76) ^a	2.95 (0.73) ^a	2.78 (0.79) ^b	$F(2, 510) = 12.82, p < .001^{***}$
Persistence in School	3.85 (0.76)	4.00 (0.64) ^a	3.60 (0.82) ^b	3.31 (0.93) ^b	$F(2, 504) = 34.29, p < .001^{***}$
Counseling Support	2.43 (0.69)	2.47 (0.71) ^a	2.14 (0.68) ^b	2.42 (0.59) ^a	$F(2, 506) = 4.21, p = .02^*$
Exploration Support	3.07 (0.69)	3.10 (0.68) ^a	3.08 (0.76) ^{ab}	2.90 (0.69) ^b	$F(2, 506) = 3.16, p = .04^*$
Influence on Aspirations	3.19 (0.61)	3.29 (0.55) ^a	3.12 (0.58) ^a	2.78 (0.69) ^b	$F(2, 507) = 26.99, p < .001^{***}$
Teacher Support	3.35 (0.65)	3.40 (0.62) ^a	3.28 (0.66) ^{ab}	3.20 (0.75) ^b	$F(2, 504) = 3.58, p = .03^*$

Note. Number of cases and % of cases within cluster reported for categorical variables. For categorical variables post-hoc tests using Fisher's Exact T-test were conducted as a follow up to statistically significant chi square tests. For continuous variables means and (standard deviations) reported. For continuous variables post-hoc tests using Tukey's HSD and Dunnett's C (for violations of equal variance) were conducted as a follow up to statistically significant F tests. Group means sharing superscripts do not differ at $p < .05$.

Table 2

Multinomial Logistic Regression Results Predicting Group Membership with 2-Year College Group as Reference Group

Variables	Reference Group: 2-Year College					
	4-Year College			None		
	B	SE	OR	B	SE	OR
<i>Background Variables</i>						
Female	-0.71 *	0.35	0.49	-1.03 **	0.34	0.36
Under-represented Minority	0.57 †	0.32	1.77	-0.17	0.40	0.84
Educational Aspirations	0.44 *	0.11	1.56	0.15	0.10	1.17
Educational Expectations	0.04	0.13	1.04	-0.26 †	0.14	0.77
Pre-High School Expectations	0.28 ***	0.07	1.32	-0.01	0.10	0.99
<i>Schooling Experiences</i>						
Grades	0.62 *	0.26	1.85	-0.32	0.26	0.73
Liking School	0.21	0.25	1.24	-0.01	0.27	1.00
Persistence in School	0.39	0.28	1.47	0.09	0.33	1.10
Counseling Support	0.60 *	0.25	1.82	0.75 *	0.33	2.11
Exploration Support	-0.43	0.39	0.65	-0.28	0.36	0.75
Influence on Aspirations	0.44	0.43	1.55	-0.52	0.49	0.59
Teacher Support	-0.08	0.38	0.92	-0.01	0.45	0.98
Intercept	-15.33	2.16		4.59	2.15	
Log pseudo likelihood ^a			-257.71			
Pseudo R^{2a}			0.30			
N			511			

a. Fit statistics based on one complete and imputed data set.

*** $p < .001$ ** $p < .01$ * $p < .05$ † $p < .10$ (two tailed test)

Table 3

Standardized Means of the Four-Cluster Solution

Variable	Multiple Risk	Undecided	Low Risk	Low Utility
<i>N</i> (%)	32 (26.2%)	25 (20.5%)	40 (32.8%)	25 (20.5%)
Financial Hardship	0.56	0.06	-0.39	0.00
Don't Need a 4-Year Degree	0.45	-0.74	-0.68	1.12
Career Indecision	0.59	0.92	-1.04	-0.03
Personal Problems	1.20	-0.22	-0.45	-0.56
Negative Academic Attitude	0.70	-0.12	-0.62	0.18
Negative Attitudes Toward College Success	1.14	-0.12	-0.61	-0.44
Negative Community Expectations	0.99	-0.39	-0.44	-0.20

Note. Standardized means +/- 0.5 standard deviations are highlighted for ease of interpretability.

Table 4

Descriptive Statistics Comparing Four Clusters of Non-4-Year Students to Students Who Plan to Enroll in a 4-Year Program

Variable	Sample	Postsecondary Education Expectations Directly after Early College					Group Differences
		4-year college	Multiple Risk	Unsure	Low Risk	Low Utility	
<i>N (%)</i>	511 (100%)	384 (75.9%)	32 (6.3%)	25 (4.9%)	40 (7.9%)	25 (4.9%)	
Background Variables							
Gender (Female)	325 (63.6%)	260 (67.7%) ^a	18 (56.3%) ^b	13 (52.0%) ^b	18 (45.0%) ^c	14 (56.0%) ^b	$\chi^2(4, N = 506) = 11.62, p = .02^*$
Under-represented Minority	161 (31.5%)	123 (32.0%) ^a	14 (43.8%) ^a	10 (40.0%) ^a	11 (27.5%) ^a	3 (12.0%) ^a	$\chi^2(4, N = 506) = 7.75, p = .10, n.s.$
No PSE Immediately After High School [†]	81 (66.4%)	-	21 (65.6%) ^a	19 (76.0%) ^a	24 (60.0%) ^a	17 (68.0%) ^a	$\chi^2(3, N = 122) = 1.80, p = .61, n.s.$
Educational Aspirations	16.75 (1.46)	17.09 (1.25) ^a	15.55 (1.43) ^b	15.44 (1.47) ^b	16.00 (1.65) ^b	15.42 (1.50) ^b	$F(4, 498) = 28.28, p < .001^{***}$
Educational Expectations	16.29 (1.53)	16.65 (1.29) ^a	14.38 (1.64) ^b	15.00 (1.48) ^{bc}	15.75 (1.64) ^c	15.20 (1.53) ^{bc}	$F(4, 499) = 32.89, p < .001^{***}$
Pre-High School Expectations	15.77 (1.74)	16.07 (1.54) ^a	14.06 (1.97) ^b	15.13 (1.89) ^{ab}	15.03 (2.10) ^b	15.00 (1.77) ^{ab}	$F(4, 495) = 15.67, p < .001^{***}$
Schooling Experiences							
Grades	3.80 (0.85)	4.00 (0.74) ^a	2.87 (0.85) ^b	3.28 (0.94) ^b	3.30 (0.88) ^b	3.20 (0.82) ^b	$F(4, 502) = 28.69, p < .001^{***}$
Liking School	3.13 (0.78)	3.22 (0.76) ^a	2.72 (0.73) ^b	2.88 (0.78) ^{ab}	2.85 (0.86) ^b	2.96 (0.73) ^{ab}	$F(4, 505) = 5.89, p < .001^{***}$
Persistence in School	3.85 (0.76)	4.00 (0.64) ^a	3.21 (0.89) ^b	3.39 (0.78) ^b	3.44 (1.04) ^b	3.57 (0.78) ^{ab}	$F(4, 499) = 17.15, p < .001^{***}$
Counseling Support	2.43 (0.69)	2.47 (0.71) ^a	1.94 (0.63) ^b	2.38 (0.46) ^{ab}	2.52 (0.67) ^a	2.43 (0.52) ^{ab}	$F(4, 502) = 4.65, p = .001^{**}$
Exploration Support	3.07 (0.69)	3.10 (0.68) ^a	2.98 (0.76) ^a	3.03 (0.65) ^a	2.90 (0.78) ^a	2.94 (0.66) ^a	$F(4, 502) = 1.21, p = .31, n.s.$
Influence on Aspirations	3.19 (0.61)	3.29 (0.55) ^a	2.87 (0.69) ^b	2.97 (0.55) ^{ab}	2.88 (0.78) ^b	2.81 (0.58) ^b	$F(4, 502) = 11.39, p < .001^{***}$
Teacher Support	3.35 (0.65)	3.39 (0.62) ^a	3.17 (0.81) ^a	3.21 (0.63) ^a	3.11 (0.80) ^a	3.42 (0.57) ^a	$F(4, 498) = 2.76, p = .03^*$

Note. For categorical variables number of cases and % of cases within cluster reported. For categorical variables post-hoc tests using Fisher's Exact T-test were conducted as a follow up to statistically significant contingency table chi square tests. For continuous variables means and (standard deviations) reported. For continuous variables post-hoc tests using Tukey's HSD and Dunnett's C (for violations of equal variance assumption) were conducted as a follow up to statistically significant omnibus F tests. Group means that share superscripts do not statistically differ at $p < .05$ level. [†] Analytic sample only includes students who did not plan to enroll in a 4-year program immediately after high school.